

# Student Prospectus

2021/2022





# Welcome.

Dear students,

Thank you for your interest in City University College. We are committed to building a university set to produce qualified leaders empowered with the knowledge, skills and personalities that will enable them to create tangible value their communities and worldwide.

We invite you to explore our campus and meet our team.

**Richard Hollywood**  
Principal



## Our vision

‘To be a world class institution of higher education that supports the Qatar National Vision 2030 and nurtures creativity, entrepreneurship & research for the holistic development of our students’

## Our mission

We aim to be:

- A modern, dynamic and forward thinking provider of outstanding academic excellence that transforms the lives of students, its stakeholders and the wider community
- A leader in Qatar's 2030 National Vision to build a world class educational system that provides students with a first-rate education, comparable to that offered anywhere in the world.
- An educational institution which promotes innovation and excellence and nurtures creativity, entrepreneurship & research.
- The Higher Education provider of choice in Qatar.





# Go vocational

City University College (CUC) was established in 2018. It graduated its first cohort of business students in July 2020.

CUC is a modern and dynamic higher education institution that creates opportunity for all. It originally offered the vocational pathway of studying through its BTEC degrees awarded by Pearson Education in the UK, then partnered with Ulster University to offer a parallel academic pathway through which BTEC students can top their Higher National Diploma with a Bachelor Honours degree and a post-graduate degree.

CUC currently offers the following BTEC courses: General Business, Entrepreneurship and Small Business Management, General Computing and Computing and Applications Development with plans to broaden its range of courses in the near future.

BTEC qualifications are highly valued by both universities and employers. The skills you'll gain as a student will enhance your life, your education and your career aspirations.



# Choose BTEC

Get your Higher National Diploma from the UK while studying in Qatar!

Whether you're the next big entrepreneur or looking to go to a top university, BTEC has a route for you. BTEC courses are high quality, hands-on qualifications grounded in the real world of work. You will learn by doing, and develop valuable employability skills that you will use throughout your future career or progression into university.

Why choose BTEC

1  
million

learners  
choose BTEC  
every year

90%

of BTEC graduates  
are likely to be  
employed after  
graduating

25%

of learners  
entering university  
in the UK  
have BTEC

BTEC

courses are  
co-designed  
with industry

City University College in partnership with Ulster University runs two intakes a year (September and January) with flexible modes of study (morning and evening classes) that suit both students and working professionals.

## What a BTEC course is like

BTECs are high quality, hands-on qualifications grounded in the real world of work.

BTEC qualifications teach you practical skills in an engaging and stimulating way. Throughout the course, you work on a series of assignments set in a real-world environment, developing the practical knowledge and skills employers and universities are looking for.

As a BTEC qualified student, you will keep applying what you learn on your BTEC course as you progress to university or a job – and throughout your future career.

## BTEC mode of study and assessment

During your course of study, you will be required to supplement the classroom-based education with independent study in the form of research, homework tasks or group work. Self-study is vital to your success in this course, and lecturers will guide you throughout the study period on how best to approach independent study. You will develop the practical and managerial skills required to work and gain transferable skills such as verbal and non-verbal communication skills, research skills, teamwork, problem solving and analytical skills.

No formal examinations are required for the course. Assessments of the BTEC are undertaken in various ways such as writing assignments, analysing case studies, delivering presentations, completing portfolios of evidence or writing reports.

# Student Support

## Academic Support

City University College in partnership with Ulster University provides the support necessary to get students to perform at their full potential.

The range of support provided depends on the student's learning needs. CUC is committed to accommodating and providing you with the best learning environment to ensure you make the most of your time and studies.

## Counselling Support

At CUC, we place great emphasis on the wellbeing of our students. We encourage them to access our counsellor to help you promote their quality of life and become active and integrated members of the community. Counselling sessions are confidential.

## Financial Support

All students are eligible to apply for financial aid. Financial aid is given based on financial need and academic performance. Each application will be revised and assessed individually.

To help spread the cost of your studies, tuition fees can be paid in instalments. You can arrange with our Finance Department regarding a flexible payment plan.

A 10% discount is available when you pay your tuition fees in full, prior to the start of the semester.

## Career Support

CUC equips its students with the best skills for employability and gives them individual career advice.

CUC works to link students to employers in Qatar through its career support services and work placements.

# Entry Requirements

- Evidence of successful completion of a qualification studied in English equivalent to an IELTS overall score of 5
- A minimum of Pass profile in high school or One A- Level (PASS)/ or IB Certificate (minimum 24 points)/ or BTEC Level 3 at Advanced Diploma level

*Other international qualifications will be considered on merit for equivalency with the above requirements.*

If you do not meet the entry requirements, CUC will provide you with a support programme that will help you improve your English level and your academic skills.

CUC runs 2 intakes a year:

September Intake: applications close on August 1<sup>st</sup>

January Intake: applications close on January 5<sup>th</sup>

## How to apply:

Applying is free. You can apply online following the steps below:

- 1 Visit our website**  
Check our range of courses.  
[cityuniversitycollege.edu.qa](http://cityuniversitycollege.edu.qa)
- 2 Apply online**  
Go to the page "how to apply", download the application form and email it with your supporting documents to:  
[admissions@cityuniversitycollege.edu.qa](mailto:admissions@cityuniversitycollege.edu.qa)
- 3 Receive your letter of offer**  
We will email you the letter of offer together with an "intent form" within 3 working days from the receipt of the full application.
- 4 Accept your offer**  
To secure your place, fill the "intent form" and email it back to admissions. Meet the conditions of your offer (if any), and pay a deposit.



Your pathway to a Bachelor's Degree with CUC  
in partnership with Ulster University:

- UK Diploma in Qatar, with the option of pursuing the Bachelor locally, in the UK or internationally
- 70% more personal teaching contact hours
- Industry-specific learning material
- Experience-based learning
- Flexible mode of study with morning and evening classes
- Flexible payment plans
- Recognised international diploma with transferable credits
- Recognised international bachelor from our partner, Ulster University

# Our BTEC Courses

- **General Business**
- **Entrepreneurship and Small Business Management**
- **General Computing**
- **Computing and Application Development**

*Our credit-based courses are accredited by the Business and Technology Education Council (BTEC), awarded by the internationally-recognised awarding body: Pearson Education Ltd. (UK) and licensed by the Ministry of Education and Higher Education in Qatar.*





# General Business

Join the world of business and get enthused by some influential industry minds!

## About this course

**Give yourself a head start in today's competitive world of business with our inspiring and practical BTEC Higher National diplomas!**

We take the theories off the page by placing industry expertise at the heart of our qualifications. This course prepares you for a career in business management by providing you with the most relevant career-related content, where you learn, practice and get work-ready. It develops and enhances the range of your personal, cognitive, commercial and interpersonal transferable skills that are vital to a successful performance in the workplace.

## BTEC HND in Business Where could it take you?

Once you have completed the course, you can choose to move directly to the workplace where you can undertake a job role as Retail Manager, Sales Manager, Business Consultant or General Manager.

BTEC graduates possess a combination of knowledge and skills attractive to employers worldwide.

At the same time the BTEC Higher Nationals are intended to keep doors open for future study should you wish to progress further in your education. You can gain a Bachelor (BSc) Honours in Business Studies degree awarded by our partner \*Ulster University Qatar, or choose to transfer to various other universities around the UK and worldwide.

*\*Ulster University is one of the largest and top-ranked Business schools in the UK, it is the 7th out of 101 Business Schools for research excellence, #1 NI University for student satisfaction (NationalSurvey2018)*

*\* Programme accredited by the Association of Chartered Certified Accountants (ACCA), the Chartered Institute of Procurement and Supply (CIPS) and the Chartered Institute of Management Accountants (CIMA), in the UK, with more on the way.*



## General Business

### What will you study?

You will take a minimum of 15 units (240 credits) to gain your diploma over the course of two to three years of study: 120 credits, 8 units in Level 4 (15 credits each unit) and 120 credits, 7 units in Level 5 (one 30-credit unit, and six 15-credit units). Extra support modules customised to student's needs might be added to the following units.

### Level 4 modules

#### Management Accounting

15 credits

The overall aim of this unit is to introduce the fundamentals of management accounting which apply to the wider business environment and the organisations which operate within that environment. You will explore how management accounting uses financial data to aid planning decisions, and the monitoring and control of finance within organisations. On successful completion of this unit, you will be in a position to present financial statements in a workplace context and be able to assist senior colleagues with financial business planning. In addition, you will have the fundamental knowledge and skills to progress onto a higher level of study.

#### Marketing Essentials

15 credits

This unit is designed to introduce you to the principles of marketing, enabling them to develop a basic marketing plan and to employ elements of the marketing mix to achieve results. While you will learn the underpinning theories and frameworks, you will also be able to relate these to real-world examples, including products/services that they encounter in their own daily lives. Organisations such as Apple, Google, VISA, Nestle, Unilever, Coca-Cola, Unicef, BP and small local businesses all have at least one thing in common: they all use marketing to influence us to engage with their products and/or services. Whether it is becoming a loyal customer buying a product and service or donating to a charity, organisations use a range of marketing techniques and tools to inform and influence us. The knowledge, understanding and skill sets that you will gain on successfully completing this unit will enhance your career opportunities; whether setting up your own business or being employed by an organisation.

#### Business and the Business Environment

15 credits

The aim of this unit is to provide you with background knowledge and understanding of business, the functions of an organisation and the wider business environments in which organisations operate. You will examine the different types of organisations (profit and non-profit), their size and scope (for instance, micro, SME, transnational and global) and how they operate. You will explore the relationships that organisations have with their various stakeholders and how the wider external environments influence and shape business decision-making.

#### Managing a Successful Business Project

15 credits

This unit is assessed by a Pearson-set assignment. The project brief will be set by the centre, based on a theme provided by Pearson (this will change annually). The theme and chosen project within the theme will enable you to explore and examine a relevant and current topical aspect of business in the context of the business environment. The aim of this unit is to offer you an opportunity to demonstrate the skills required for managing and implementing a project. You will undertake independent research and investigation for carrying out and executing a business project which meets appropriate business aims and objectives. On successful completion of this unit, you will have the confidence to engage in decision-making, problem-solving and research activities using project management skills. You will have the fundamental knowledge and skills to enable them to investigate and examine relevant business concepts within a work-related context, determine appropriate outcomes, decisions or solutions and present evidence to various stakeholders in an acceptable and understandable format.

#### Human Resource Management

15 credits

The aim of this unit is to enable you to appreciate and apply principles of effective Human Resource Management (HRM). People are the lifeblood of any organisation and being able to attract, recruit and retain talented staff is at the core of all HRM activity. This unit will explore the tools and techniques used in HRM to maximise the employee contribution and how to use HR methods to gain competitive advantage. You will explore the importance of training and development in building and extending the skills base of the organisation and ensuring it is relevant to the ever-changing business environment. You will also consider the growing importance of becoming a flexible organisation with an equally flexible labour force, and become familiar with techniques of job design and with different reward systems. The unit investigates the importance of good employee relations and the ways in which employers engage with their staff and possibly with trade unions. You will gain an understanding of the law governing HRM processes as well as the best practices which enable an employer to become a 'employer of choice' in their labour market.

#### Management and Operations

15 credits

The aim of this unit is to help you understand the difference between the function of a manager and the role of a leader. You will consider the characteristics, behaviours and traits which support effective management and leadership. In addition, this unit will introduce the concept of operations as both a function and a process which all organisations must adopt to conduct business. You will be introduced to contemporary and historical theories and concepts which will support their learning for this unit. On successful completion of this unit, you will have developed sufficient knowledge and understanding of how management and operations make a positive, efficient and effective contribution to an organisation at a junior level. This could be in the role of a

team leader or managing a specific aspect of an operation function and/or process. Underpinning all aspects of the content for this unit you will consider topics under two broad headings: management and operations.

#### Innovation and Commercialisation

15 credits

This unit aims to equip you with a comprehensive understanding of innovation and commercialisation. In today's competitive landscape it is critical that organisations continually innovate both their product offering and processes to ensure that they remain competitive in the market. Furthermore, adopting a more commercially driven approach is vital to maximise the Return on Investment (ROI). In this unit, we will look at a number of tools and techniques organisations use to drive innovation and become more commercial in their approach. The aim of the unit is to give you cutting-edge knowledge as well as practical application of the key ways organisations become more innovative while remaining commercially driven.

#### Financial Accounting

15 credits

Balancing the books is at the heart of all business management. The overall aim of this unit is to introduce you to essential financial accounting principles and techniques which will enable you to record and prepare basic final accounts. You will learn how to prepare accounts for sole traders and partnerships as well as limited companies. On successful completion of this unit, you will be able to contribute effectively to the accounting function of an organisation, or to understand how to record and prepare basic financial accounts for your own business. You will have the knowledge and skills required to progress to a higher level of study.

## General Business

### Level 5 modules

#### Research Project \*\*

30 credits

This unit is assessed by a Pearson-set assignment. You will choose your own project based on a theme provided by Pearson (this will change annually). This will enable you to explore and examine a relevant and current topical aspect of business in the context of the business environment.

The aim of this unit is to offer you the opportunity to engage in sustained research in a specific field of study. The unit enables you to demonstrate the capacity and ability to identify a research theme, to develop research aims, objectives and outcomes, and to present the outcomes of such research in both written and verbal formats. The unit also encourages you to reflect on their engagement in the research process during which recommendations for future, personal development are key learning points.

On successful completion of this unit, you will have the confidence to engage in problem-solving and research activities which are part of the function of a manager. You will have the fundamental knowledge and skills to enable them to investigate workplace issues and problems, determine appropriate solutions and present evidence to various stakeholders in an acceptable and understandable format.

#### Business Strategy

15 credits

The aim of this unit is to develop your awareness of the different kinds of strategy which could be used in an operational, tactical or strategic role for an organisation. This will be underpinned by a thorough knowledge and understanding of the theories, models and concepts which could significantly support an organisation's strategic choice and direction. On successful completion of this unit, you will have developed sufficient knowledge and understanding of strategy to make a positive, efficient and effective contribution to the development of business plans and operational direction. This could be in the role of a junior manager responsible for having a specific input into an organisation's decision-making and planning.

#### Business Systems

15 credits

The aim of this unit is to introduce you to the theoretical basis for business systems and their practical application. You will understand and appreciate how business systems support the achievement of organisational objectives, particularly through the management of information and the use of Information Communications Technology (ICT) to gain a competitive advantage. You will explore the role of systems within organisations, the management of business systems and analytical tools and techniques for monitoring and measuring control and delivery.

On successful completion of this unit, you will have developed sufficient knowledge and understanding of the practical application of a business system to be able to utilise this 'tool' as a more effective and efficient manager. You will also be able to contribute to the design of a business system in a workplace context.

#### Organisational Behaviour

15 credits

The aim of this unit is to develop your understanding of the influence culture, politics and power have on the behaviour of others in an organisational context. You will be in a position to apply the principles of organisational behaviour to a variety of business situations. On successful completion of this unit, you will have an understanding and awareness of key influences which affect the behaviour of individuals, teams and organisations as a whole. You will be able to use this knowledge to make an immediate and positive contribution in the workplace, whether that role is as part of a team or as a team leader. This will be achieved through a strong appreciation of working in a team, having a more profound perspective of what makes people and organisations do what they do, and how to adjust one's own behaviour to reflect the circumstances and situation.

#### Understanding and Leading Change

15 credits

The aim of this unit is to prepare you to anticipate, plan and deliver organisational change. In addition you will be able to predetermine appropriate and timely interventions required to maximise the benefits and minimise the risk of organisational change. On successful completion of this unit, you will have developed sufficient knowledge and understanding of leadership in the context of organisational change to make an effective and immediate contribution to the way in which an organisation determines and responds to change drivers. You will also be in a strong position to contribute to change initiatives as well as to consider the strategies required to change resistors.

#### Developing Individuals, Teams and Organisations

15 credits

The aim of this unit is to provide you with the opportunity to appreciate that developing knowledge and skills to achieve high performance is a cross- organisation activity. You will recognise that your own professional development is just one route to improving the performance of those teams and organisations in which you work. You will also gain an awareness of the context in which learning takes place and how development needs are linked to learning interventions aimed at supporting an organisation's strategy. On successful completion of this unit, you will have laid the foundations for your own continuing professional development which will support your future engagement in lifelong learning. You will also be able to contribute to the development of others and make a positive contribution to the sustainable growth of an organisation.

#### Consumer Behaviour and Insight

15 credits

This unit is designed to enhance your knowledge and understanding of the consumer's decision-making processes, from needs recognition through research, the evaluation of alternatives, purchase and post-purchase evaluation. While you will learn the underpinning theories and frameworks, you will also be expected to relate these to real-world examples, including your own personal experiences.

How do we buy products and services? What motivates us to seek out a particular product or service? What research do we undertake prior to making a decision? Do we seek out other people's opinions, perhaps through social media? To what extent do other people's opinions influence our own? How do we feel after we have made the purchase?

These are the types of questions to which organisations seek to gain answers. An important part of marketing is understanding the processes behind how a consumer makes the decision to purchase a product and/or service. This is applicable as much to Business to Business (B2B) as it is to Business to Consumer (B2C).

The knowledge, understanding and skill sets that you will gain on successfully completing this unit will enhance their career opportunities; whether setting up in business independently or being employed by an organisation.



# Entrepreneurship & Small Business Management

Expand your knowledge of entrepreneurship and develop venture management skills and techniques!

## About this course

**Learn, practice and get ready to develop your entrepreneurship skills!**

With its relevant career-related content, this course prepares you to start up your own business. Entrepreneurial skills are also in demand in established companies. Every business, large or small, must be entrepreneurial just to survive. You will develop and enhance the range of your personal, cognitive, commercial and interpersonal transferable skills and build your confidence. You will learn to evaluate the appropriateness of different approaches to solving problems. You will be able to perform effectively in situations requiring personal responsibility and decision-making.

## **BTEC HND in Entrepreneurship and Small Business Management** **Where could it take you?**

Once you have completed the course, you will expand your knowledge of entrepreneurship and develop venture management skills and techniques.

You will be ready to move forward and start your own business or get a job at an established company.

You will learn everything you need to know from preparing for entrepreneurship, to building your business, ensuring your financial strength, promoting your brand, raising capital, opening for business, and so much more.

At the same time the BTEC Higher Nationals are intended to keep doors open for future study should you wish to progress further in your education. You can gain a Bachelor Honours degree awarded by our partner \*Ulster University Qatar, or choose to transfer to various other universities around the UK and worldwide.

*\*Ulster University is one of the largest and top-ranked Business schools in the UK, it is the 7th out of 101 Business Schools for research excellence, #1 NI University for student satisfaction (NationalSurvey2018)*

*\* Programme accredited by the Association of Chartered Certified Accountants (ACCA), the Chartered Institute of Procurement and Supply (CIPS) and the Chartered Institute of Management Accountants (CIMA), in the UK, with more on the way.*

## Entrepreneurship & Small Business Management

### What will you study?

You will take a minimum of 15 units (240 credits) to gain your diploma over the course of two to three years of study: 120 credits, 8 units in Level 4 (15 credits each unit) and 120 credits, 7 units in Level 5 (one 30-credit unit, and six 15-credit units). Extra support modules customised to student's needs might be added to the following units.

### Level 4 modules

#### Management Accounting

15 credits

The overall aim of this unit is to introduce the fundamentals of management accounting which apply to the wider business environment and the organisations which operate within that environment. You will explore how management accounting uses financial data to aid planning decisions, and the monitoring and control of finance within organisations.

On successful completion of this unit, you will be in a position to present financial statements in a workplace context and be able to assist senior colleagues with financial business planning. In addition, you will have the fundamental knowledge and skills to progress onto a higher level of study.

#### Marketing Essentials

15 credits

This unit is designed to introduce you to the principles of marketing, enabling them to develop a basic marketing plan and to employ elements of the marketing mix to achieve results. While you will learn the underpinning theories and frameworks, you will also be able to relate these to real-world examples, including products/services that they encounter in their own daily lives.

Organisations such as Apple, Google, VISA, Nestle, Unilever, Coca-Cola, Unicef, BP and small local businesses all have at least one thing in common: they all use marketing to influence us to engage with their products and/or services. Whether it is becoming a loyal customer buying a product and service or donating to a charity, organisations use a range of marketing techniques and tools to inform and influence us.

The knowledge, understanding and skill sets that you will gain on successfully completing this unit will enhance your career opportunities; whether setting up your own business or being employed by an organisation.

#### Business and the Business Environment

15 credits

The aim of this unit is to provide you with background knowledge and understanding of business, the functions of an organisation and the wider business environments in which organisations operate. You will examine the different types of organisations (profit and non-profit), their size and scope (for instance, micro, SME, transnational and global) and how they operate. You will explore the relationships that organisations have with their various stakeholders and how the wider external environments influence and shape business decision-making.

#### Managing a Successful Business Project

15 credits

This unit is assessed by a Pearson-set assignment. The project brief will be set by the centre, based on a theme provided by Pearson (this will change annually). The theme and chosen project within the theme will enable you to explore and examine a relevant and current topical aspect of business in the context of the business environment.

The aim of this unit is to offer you an opportunity to demonstrate the skills required for managing and implementing a project. You will undertake independent research and investigation for carrying out and executing a business project which meets appropriate business aims and objectives. On successful completion of this unit, you will have the confidence to engage in decision-making, problem-solving and research activities using project management skills. You will have the fundamental knowledge and skills to enable them to investigate and examine relevant business concepts within a work-related context, determine appropriate outcomes, decisions or solutions and present evidence to various stakeholders in an acceptable and understandable format.

#### Human Resource Management

15 credits

The aim of this unit is to enable you to appreciate and apply principles of effective Human Resource Management (HRM). People are the lifeblood of any organisation and being able to attract, recruit and retain talented staff is at the core of all HRM activity. This unit will explore the tools and techniques used in HRM to maximise the employee contribution and how to use HR methods to gain competitive advantage. You will explore the importance of training and development in building and extending the skills base of the organisation and ensuring it is relevant to the ever-changing business environment. You will also consider the growing importance of becoming a flexible organisation with an equally flexible labour force, and become familiar with techniques of job design and with different reward systems.

The unit investigates the importance of good employee relations and the ways in which employers engage with their staff and possibly with trade unions. You will gain an understanding of the law governing HRM processes as well as the best practices which enable an employer to become an 'employer of choice' in their labour market.

#### Management and Operations

15 credits

The aim of this unit is to help you understand the difference between the function of a manager and the role of a leader. You will consider the characteristics, behaviours and traits which support effective management and leadership. In addition, this unit will introduce the concept of operations as both a function and a process which all organisations must adopt to conduct business. You will be introduced to contemporary and historical theories and concepts which will support their learning for this unit.

On successful completion of this unit, you will have developed sufficient knowledge and understanding of how management and operations make a positive, efficient and effective contribution to an organisation at a junior level. This could be in the role of a team leader or managing a specific aspect of an operation function and/or process. Underpinning all aspects of the content for this unit you will consider topics under two broad headings: management and operations.

#### Innovation and Commercialisation

15 credits

This unit aims to equip you with a comprehensive understanding of innovation and commercialisation.

In today's competitive landscape it is critical that organisations continually innovate both their product offering and processes to ensure that they remain competitive in the market. Furthermore, adopting a more commercially driven approach is vital to maximise the Return on Investment (ROI). In this unit, we will look at a number of tools and techniques organisations use to drive innovation and become more commercial in their approach. The aim of the unit is to give you cutting-edge knowledge as well as practical application of the key ways organisations become more innovative while remaining commercially driven.

#### Entrepreneurship and Small Business Management

15 credits

This unit provides you with an understanding of the definition and scope of entrepreneurship and an understanding of the enablers and barriers to business start-up.

You will learn about the influence of national culture and economy on entrepreneurship and will explore the personal characteristics of entrepreneurs and the impact of personal situational factors, including education and background. You will also learn about the role and importance of small firms to the economy, and about social enterprise and the social economy. You will also be expected to understand the balance of risk and reward in starting a new venture and you will investigate and reflect on your own entrepreneurial and enterprising characteristics. Examples of entrepreneurs and start-up organisations will be discussed and you will be expected to draw on local, personal and general knowledge together with your learning to be able to identify the characteristics of entrepreneurial ventures.



## Entrepreneurship & Small Business Management

### Level 5 modules

#### Research Project\*\*

30 credits

This unit is assessed by a Pearson-set assignment. You will choose your own project based on a theme provided by Pearson (this will change annually). This will enable you to explore and examine a relevant and current topical aspect of business in the context of the business environment.

The aim of this unit is to offer you the opportunity to engage in sustained research in a specific field of study. The unit enables you to demonstrate the capacity and ability to identify a research theme, to develop research aims, objectives and outcomes, and to present the outcomes of such research in both written and verbal formats. The unit also encourages you to reflect on their engagement in the research process during which recommendations for future, personal development are key learning points.

On successful completion of this unit, you will have the confidence to engage in problem-solving and research activities which are part of the function of a manager. You will have the fundamental knowledge and skills to enable them to investigate workplace issues and problems, determine appropriate solutions and present evidence to various stakeholders in an acceptable and understandable format.

#### Launching a New Venture

15 credits

This unit provides you with a practical understanding of what is required to successfully launch a new venture. It gives you an opportunity to work within a small team to fully plan the launch of a specific new venture idea. You will learn about and work through the stages of planning to launch the venture culminating in a group presentation of a launch plan. This will include an explanation of the idea, how it will attract customers and have competitive advantage. You will develop a promotional plan to get it started, preparing a budget for launch and a cash flow forecast for the first 12–18 months of operation for the chosen venture. You will learn about the need for resourcefulness when starting a new venture, and will be able to identify and tap into personal networks which can offer a valuable source of knowledge, resources, advice and opportunities.

#### Identifying Entrepreneurial Opportunities

15 credits

The role of the entrepreneur is to weigh up opportunities, threats and personal capacity to translate an opportunity into a business idea. This unit provides you with an understanding of where new venture ideas come from and gives you the opportunity to investigate and evaluate a new venture idea.

You will explore concepts of innovation and creativity and develop creative abilities. You will learn about and use methods and frameworks to help develop and assess venture ideas, including defining product/service benefits, identifying target customers and understanding the industry and competitors from the perspective of a new entrant. You will learn about market research and apply primary and secondary research techniques to investigate a personal entrepreneurial idea and make an assessment of whether it is likely to be a commercially viable business or social enterprise proposition.

#### Managing and Running a Small Business

15 credits

This unit will provide you with a practical understanding of the key aspects of running a small business or social enterprise. You will learn about the activities involved in running a small business, including developing good relationships with customers, planning and allocating operational resources, forecasting and budgeting, interpreting financial statements, recruitment and retention of staff, leadership and building a team, dealing with legislation and regulation and how to put together a business plan.

You will be able to apply their learning to a simulated business of their choice that they will work on as part of a group. You will develop an understanding of how all of the different aspects of running a business interrelate to achieve success, and develop an appreciation of the benefits and importance of organisation and planning.

#### Organisational Behaviour

15 credits

The aim of this unit is to develop your understanding of the influence culture, politics and power have on the behaviour of others in an organisational context. You will be in a position to apply the principles of organisational behaviour to a variety of business situations.

On successful completion of this unit, you will have an understanding and awareness of key influences which affect the behaviour of individuals, teams and organisations as a whole. You will be able to use this knowledge to make an immediate and positive contribution in the workplace, whether that role is as part of a team or as a team leader. This will be achieved through a strong appreciation of working in a team, having a more profound perspective of what makes people and organisations do what they do, and how to adjust one's own behaviour to reflect the circumstances and situation.

#### Business Systems

15 credits

The aim of this unit is to introduce you to the theoretical basis for business systems and their practical application. You will understand and appreciate how business systems support the achievement of organisational objectives, particularly through the management of information and the use of Information Communications Technology (ICT) to gain a competitive advantage. You will explore the role of systems within organisations, the management of business systems and analytical tools and techniques for monitoring and measuring control and delivery.

On successful completion of this unit, you will have developed sufficient knowledge and understanding of the practical application of a business system to be able to utilise this 'tool' as a more effective and efficient manager. You will also be able to contribute to the design of a business system in a workplace context.

#### Consumer Behaviour Insight

15 credits

This unit is designed to enhance your knowledge and understanding of the consumer's decision-making processes, from needs recognition through research, the evaluation of alternatives, purchase and post-purchase evaluation. While you will learn the underpinning theories and frameworks, you will also be expected to relate these to real-world examples, including your own personal experiences.

How do we buy products and services? What motivates us to seek out a particular product or service? What research do we undertake prior to making a decision? Do we seek out other people's opinions, perhaps through social media? To what extent do other people's opinions influence our own? How do we feel after we have made the purchase?

These are the types of questions to which organisations seek to gain answers. An important part of marketing is understanding the processes behind how a consumer makes the decision to purchase a product and/or service. This is applicable as much to Business to Business (B2B) as it is to Business to Consumer (B2C).

The knowledge, understanding and skill sets that you will gain on successfully completing this unit will enhance their career opportunities; whether setting up in business independently or being employed by an organisation.

# General Computing

Find your place in the fast-growing industry of computing and digital technologies!

## About this course

**Choose computing, and you're choosing to be part of a growing and evolving sector, integral to the modern world!**

Get the chance to investigate the wide reaching influences that computers and digital technologies have on the world, make your own contributions and find your place in this fast-growing sector! This course develops you as a professional, self-reflecting individual able to meet the demands of employers in the computing sector and adapt to a constantly changing world. You will acquire a sound knowledge of the basic concepts of computing, and communicate accurately and appropriately. You will develop a range of transferable skills to ensure effective team working, independent initiatives, organisational competence, problem-solving strategies and resilience.

## BTEC HND in Computing Where could it take you?

Once you have completed the course, you can choose to move directly to the workplace where you can undertake a job role as a Systems Analyst, Data Designer, Systems Tester, Database Administrator, IT Project Manager, IT Support Technician, Web Designer.

BTEC graduates possess a combination of knowledge and skills attractive to employers worldwide.

At the same time the BTEC Higher Nationals are intended to keep doors open for future study should you wish to progress further in your education. You can gain a Bachelor Honours Computing Technologies degree awarded by our partner \*Ulster University, or choose to transfer to various other universities around the UK and worldwide.

*\*Ulster University is #1 NI University for student satisfaction (NationalSurvey2018)*



## General Computing

### What will you study?

You will take a minimum of 15 units (240 credits) to gain your diploma over the course of two to three years of study: 120 credits, 8 units in Level 4 (15 credits each unit) and 120 credits, 7 units in Level 5 (one 30-credit unit, and six 15-credit units). Extra support modules customised to student's needs might be added to the following units.

### Level 4 modules

#### Programming

15 credits

The aim of Programming involves describing processes and procedures which are derived from algorithms. The ability to program is what sets apart a developer and an end user. Typically the role of the developer is to instruct a device (such as a computer) to carry out instructions; the instructions are known as source code and is written in a language that is converted into something the device can understand. The device executes the instructions it is given.

This unit introduces students to the core concepts of programming with an introduction to algorithms and the characteristics of programming paradigms. Among the topics included in this unit are: introduction to algorithms, procedural, object-orientated & event-driven programming, security considerations, the integrated development environment and the debugging process. Algorithms in a chosen language within a suitable Integrated Development Environment (IDE) will be used to develop and help track any issues with the code.

#### Security

15 credits

The aim of this unit is to provide you with knowledge of security, associated risks and how security breaches impact on business continuity. You will examine security measures involving access authorisation, regulation of use, implementing contingency plans and devising security policies and procedures. This unit introduces you to the detection of threats and vulnerabilities in physical and IT security, and how to manage risks relating to organisational security. Among the topics included in this unit are Network Security design and operational topics, including address translation, DMZ, VPN, firewalls, AV and intrusion detection systems. Remote access will be covered, as will the need for frequent vulnerability testing as part of organisational and security audit compliance.

#### Professional Practice

15 credits

The aim This unit provides a foundation for good practice in a variety of contexts. The ability to communicate effectively using different tools and mediums will ensure that practical, research, design, reporting and presentation tasks are undertaken professionally and in accordance with various communication conventions.

Among the topics included in this unit are: the development of communication skills and communication literacy; the use of qualitative and quantitative data to demonstrate analysis, reasoning and critical thinking; and tasks that require the integration of others within a team-based scenario and planning and problem-solving.

#### Database Design & Development

15 credits

The aim of this unit is to give you opportunities to develop an understanding of the concepts and issues relating to database design and development, as well as to provide the practical skills to translate that understanding into the design and creation of complex databases.

Topics included in this unit are: examination of different design tools and techniques; examination of different development software options; considering the development features of a fully functional robust solution covering data integrity, data validation, data consistency, data security and advanced database querying facilities across multiple tables; appropriate user interfaces for databases and for other externally linked systems; creating complex reports/dashboards, testing the system against the user and system requirements; and elements of complete system documentation.

#### Networking

15 credits

The aim of this unit is to provide you with wider background knowledge of computer networking essentials, how they operate, protocols, standards, security considerations and the prototypes associated with a range of networking technologies.

You will explore a range of hardware, with related software, and will configure and install these to gain knowledge of networking systems. A range of networking technologies will be explored to deliver a fundamental knowledge of Local Area Networking (LAN), Wide Area Networking (WAN) and their evolution to form large-scale networks and the protocol methodologies related to IP data networks will be explored. On successful completion of this unit, you will gain knowledge and skills to successfully install, operate and troubleshoot a small network; and the operation of IP data networks, router, switching technologies, IP routing technologies, IP services and basic troubleshooting.

#### Managing a Successful Computing Project

15 credits

The aim of this unit is to offer you an opportunity to demonstrate the skills required for managing and implementing a project. You will undertake independent research and investigation for carrying out and executing a computing project which meets appropriate aims and objectives. On successful completion of this unit, you will have the confidence to engage in decision-making, problem-solving and research activities using project management skills. You will have the fundamental knowledge and skills to enable them to investigate and examine relevant computing concepts within a work-related context, determine appropriate outcomes, decisions or solutions and present evidence to various stakeholders in an acceptable and understandable format.

#### Software Development Life Cycles\*

15 credits

This unit introduces students to lifecycle decision-making at different stages of the software development process. Students will examine various lifecycle models and appreciate their particular characteristics to understand which project environments they are most appropriate for. Theoretical understanding will be translated into practical skills through an actual software development lifecycle project and students will become confident in the use of particular tools and techniques relevant to a chosen methodology.

Among the topics included in this unit are iterative and sequential models of software development lifecycles and reference frameworks for initially capturing conceptual data and information through a feasibility study and requirement gathering techniques through to analysis, design and software implementation activities.

#### Strategic Information Systems\*

15 credits

This unit introduces students to the importance of information to organisations. It will examine how systems can be used to support core business functions and enable organisations to be more productive and competitive within the global marketplace. Students will be required to analyse the information needs of an organisation at different levels and within different functional areas. It is important that computing professionals are able to understand how an organisation works and how it uses information in order to be able to design, implement, maintain and manage secure information systems to support its operations. Examination of different information systems at the operational, tactical and strategic levels will be required, in addition to evaluating their effectiveness and role in terms of decision making and gaining competitive advantage.

#### Website Design & Development\*

15 credits

This unit introduces students to the underpinning services required to host, manage and access a secure website before introducing and exploring the methods used by designers and developers to blend back-end technologies (server-side) with front-end technologies (client-side). Among the topics included in this unit are: domain structure, domain name systems, web protocols, database servers, development frameworks, website publishing, content management, search engine optimisation, web browsers, HTML standards, CSS and CSS pre-processing (LESS, SASS), presentation models, responsive design, integrated development environments, user requirements, interface design, user experience, branding, navigation, optimisation and validation.

\* Non-core modules

You need to take 2 of the 3 non-core modules above.

## General Computing

### Level 5 modules

#### Computing Research Project\*\*

30 credits

This unit is assessed by a Pearson-set assignment. Students will choose their own project based on a theme provided by Pearson (this will change annually). The project must be related to their specialist pathway of study (unless the student is studying the general computing pathway). This will enable students to explore and examine a relevant and current topical aspect of computing in the context of a business environment and their chosen specialist pathway.

The aim of this unit is to offer students the opportunity to engage in sustained research in a specific field of study. The unit enables students to demonstrate the capacity and ability to identify a research theme, to develop research aims, objectives and outcomes, and to present the outcomes of such research in both written and verbal formats. The unit also encourages students to reflect on their engagement in the research process during which recommendations for future, personal development are key learning points.

#### Operating Systems\*

15 credits

This unit introduces students to different operating systems such as DOS, Windows, UNIX and Linux. The topics covered are the tasks of operating systems such as controlling and allocating memory, prioritising system requests, controlling input and output devices, facilitating data networking and managing files, including security and protection. Among the topics included in this unit are: the history and evolution of Operating Systems; the definition of an Operating System; why Operating Systems are needed; how Operating Systems started and developed; Operating Systems management roles; management of memory, processes, processors, devices and files; security and protection: user security, device, application and process protection; inter-process communication; comparison of Operating Systems; distributed and networked systems; concurrent systems; multi-user systems; graphical interface systems; and practical application of Operating Systems: user interface commands of major Operating Systems; installations and extensions of Operating Systems.

#### Computing/Business Intelligence

15 credits

Business intelligence has evolved from technologies such as decision support systems (DSS) to include tools and methods associated with data mining, data integration, data quality and data warehousing in conjunction with other information management systems and applications. This unit introduces students to a range of tools, techniques and technologies for acquiring data and processing this into meaningful information that can be used to support business functions and processes. Within this unit students will examine the concept of business processing in terms of data capture, conversion and information output. Students will also be required to define the tools and technologies associated with business intelligence functionality. The use of a business intelligence tool/s and techniques is also required to demonstrate an understanding of a given problem. Finally, students will be expected to evaluate the impact of business intelligence for effective decision-making.

#### Systems Analysis and Design

15 credits

This unit explores the processes of systems analysis and design using two methodologies – the traditional systems development lifecycle methodology providing a comprehensive structured framework and the agile methodology with different framework models developed with the emphasis on variations of iterative incremental modelling. To provide perspective, students will examine the models in both these methodologies. They will consider the particular strengths and weaknesses of the two methodologies and examine the suitability of the methodologies using different examples. Topics included in this unit are: examining the business case for a new system or for upgrading an existing one, looking at traditional and agile systems analysis methodologies and evaluating the merits of each, considering the implications of moving from using the traditional methods of analysis and design to agile methods on analysts, designers and developers in an organisation, and applying systems design tools and techniques.

#### Network Management

15 credits

Network Management has become one of the most sought-after skills for government institutions, commercial organisations, financial institutions as well as academic institutions as they try to run their IT networks in a more cost effective, efficient and secure way. The art of Network Management needs to be perfected by those in charge of networks for today and the future. This includes multimedia applications such as VoIP, IPTV and mobile network as well as virtualised environments.

This unit introduces students to simple network Planning, Configurations, Setup, and Management, including LAN, WAN, NAT, PAN, MAN, using a variety of tools and methods for managing Networks, including Network Monitoring, Network Security such as Snort, Firewalls & IPS, Network Protocols and standards such as SNMP, NETCONF, IEEE, MIBII, RMON, MDIB & ANS.1, as well as industry's best practices. Students will also be introduced to Virtual Networks, Network Operating Systems, Risk Management and Cloud Network Management.

Among the topics included in this unit are: Network Planning, Network Configurations, Network Setup and Network Management of LANs, PAN, MAN, WAN, NAT using several tools and methods; Network Monitoring, Network Security, Network Load Balancing, Network Protocols and Standards, Best Practices, Virtualisation, Network Operating Systems, Network Risk Management and Cloud Network Management.

#### E-Commerce and Strategy

15 credits

Electronic Commerce, or E-Commerce, refers to any type of commercial/business transaction where information, data, products and services are exchanged across the internet. These transactions can cover a wide diversity of business types to include: consumer-based retail sites (e.g. Amazon), sites that provide facilities such as auctions (e.g. eBay) and business exchanges between different organisations. E-Commerce allows consumers to electronically exchange goods and services 24/7 with no barriers in terms of time or geography.

Within this unit students will gain an understanding of how and why businesses and

and organisations develop E-Commerce strategies: to remain competitive in the global market. Students will also appreciate the elements and resources required to set up an E-Commerce site and be engaged in the design and implementation of their own strategies that would in reality form part of a secure E-Commerce site.

Students will examine the impact that E-Commerce has on society and the global market for consumers, buyers and sellers in terms of the benefits and drawbacks of online purchasing. Through investigation, students will also research the technologies involved in setting up a secure E-Commerce site in preparation for their own E-Commerce strategy.

There is an expectation that students will devise a strategy based on an element of E-Commerce such as designing a shopping cart, an ordering system, payment system or an online marketing system, for example. This design should be fully implemented and evaluated accordingly in terms of its success or failure.

Standards and levels of support, marketing, CRM, promotion and supply chain management will all be explored within the context of developing the implementation strategy.

#### Cloud Computing

15 credits

Cloud Computing is a natural evolution of networking and is adapting the modern network-oriented technologies such as virtualisation, service-oriented architecture, utility computing and ubiquitous computing among others.

This unit is designed to develop an understanding of the fundamental concept of Cloud Computing, cloud segments, and cloud deployment models, the need for Cloud Computing, an appreciation of issues associated with managing cloud service architecture and to develop a critical awareness of Cloud Computing based projects.

Topics included in the unit are the paradigms of networking, fundamentals of Cloud Computing, Cloud Computing architecture, deployment models, service models, security, technological drivers, and cloud service providers.



# Computing & Application Development

**Gain the experience and learn the skills needed to excel as an Application Developer!**

## About this course

**Learn to influence how people interact with social networks, entertainment, e-commerce and information sourcing and sharing!**

Get the chance to investigate the wide reaching influences that computers and digital technologies have on the world, make your own contributions and find your place in this fast-growing sector! You will learn the skills and techniques needed to develop web and mobile applications across a variety of industries. The course is designed to prepare you for today's Internet of Things (IoT) economy.

## BTEC HND in Computing & Application Development Where could it take you?

Once you have completed the course, you can choose to move directly to the workplace where you can undertake a job role as a Software Developer, Web Developer, App Developer, VR/AR Specialist, BI Developer and more.

BTEC graduates possess a combination of knowledge and skills attractive to employers worldwide. At the same time the BTEC Higher Nationals are intended to keep doors open for future study should you wish to progress further in your education.

You can gain a Bachelor Honours degree awarded by our partner \*Ulster University, or choose to transfer to various universities around the UK and worldwide.

*\*Ulster University is #1 NI University for student satisfaction (NationalSurvey2018)*

## Computing & Application Development

### What will you study?

You will take a minimum of 15 units (240 credits) to gain your diploma over the course of two to three years of study: 120 credits, 8 units in Level 4 (15 credits each unit) and 120 credits, 7 units in Level 5 (one 30-credit unit, and six 15-credit units). Extra support modules customised to student's needs might be added to the following units.

#### Level 4 modules

##### Programming

15 credits

The aim of Programming involves describing processes and procedures which are derived from algorithms. The ability to program is what sets apart a developer and an end user. Typically the role of the developer is to instruct a device (such as a computer) to carry out instructions; the instructions are known as source code and is written in a language that is converted into something the device can understand. The device executes the instructions it is given.

This unit introduces students to the core concepts of programming with an introduction to algorithms and the characteristics of programming paradigms. Among the topics included in this unit are: introduction to algorithms, procedural, object-orientated & event-driven programming, security considerations, the integrated development environment and the debugging process. Algorithms in a chosen language within a suitable Integrated Development Environment (IDE) will be used to develop and help track any issues with the code.

##### Security

15 credits

The aim of this unit is to provide you with knowledge of security, associated risks and how security breaches impact on business continuity. You will examine security measures involving access authorisation, regulation of use, implementing contingency plans and devising security policies and procedures. This unit introduces you to the detection of threats and vulnerabilities in physical and IT security, and how to manage risks relating to organisational security. Among the topics included in this unit are Network Security design and operational topics, including address translation, DMZ, VPN, firewalls, AV and intrusion detection systems. Remote access will be covered, as will the need for frequent vulnerability testing as part of organisational and security audit compliance.

##### Networking

15 credits

The aim of this unit is to provide you with wider background knowledge of computer networking essentials, how they operate, protocols, standards, security considerations and the prototypes associated with a range of networking technologies.

You will explore a range of hardware, with related software, and will configure and install these to gain knowledge of networking systems. A range of networking technologies will be explored to deliver a fundamental knowledge of Local Area Networking (LAN), Wide Area Networking (WAN) and their evolution to form large-scale networks and the protocol methodologies related to IP data networks will be explored. On successful completion of this unit, you will gain knowledge and skills to successfully install, operate and troubleshoot a small network; and the operation of IP data networks, router, switching technologies, IP routing technologies, IP services and basic troubleshooting. Supporting a range of units in the Higher National suite, this unit underpins the principles of networks for all and enables you to work towards your studies in vendor units, if applicable.

##### Website Design & Development\*

15 credits

This unit introduces students to the underpinning services required to host, manage and access a secure website before introducing and exploring the methods used by designers and developers to blend back-end technologies (server-side) with front-end technologies (client-side). Among the topics included in this unit are: domain structure, domain name systems, web protocols, database servers, development frameworks, website publishing, content management, search engine optimisation, web browsers, HTML standards, CSS and CSS pre-processing (LESS, SASS), presentation models, responsive design, integrated development environments, user requirements, interface design, user experience, branding, navigation, optimisation and validation.

##### Professional Practice

15 credits

The aim This unit provides a foundation for good practice in a variety of contexts. The ability to communicate effectively using different tools and mediums will ensure that practical, research, design, reporting and presentation tasks are undertaken professionally and in accordance with various communication conventions.

Among the topics included in this unit are: the development of communication skills and communication literacy; the use of qualitative and quantitative data to demonstrate analysis, reasoning and critical thinking; and tasks that require the integration of others within a team-based scenario and planning and problem-solving.

##### Managing a Successful Computing Project

15 credits

The aim of this unit is to offer you an opportunity to demonstrate the skills required for managing and implementing a project. You will undertake independent research and investigation for carrying out and executing a computing project which meets appropriate aims and objectives. On successful completion of this unit, you will have the confidence to engage in decision-making, problem-solving and research activities using project management skills. You will have the fundamental knowledge and skills to enable them to investigate and examine relevant computing concepts within a work-related context, determine appropriate outcomes, decisions or solutions and present evidence to various stakeholders in an acceptable and understandable format.

##### Database Design & Development

15 credits

The aim of this unit is to give you opportunities to develop an understanding of the concepts and issues relating to database design and development, as well as to provide the practical skills to translate that understanding into the design and creation of complex databases. Topics included in this unit are: examination of different design tools and techniques; examination of different development software options; considering the development features of a fully functional robust solution covering data integrity, data validation, data consistency, data security and advanced database querying facilities across multiple tables; appropriate user interfaces for databases and for other externally linked systems; creating complex reports/dashboards, testing the system against the user and system requirements; and elements of complete system documentation.

##### Strategic Information Systems\*

15 credits

This unit introduces students to the importance of information to organisations. It will examine how systems can be used to support core business functions and enable organisations to be more productive and competitive within the global marketplace. Students will be required to analyse the information needs of an organisation at different levels and within different functional areas. It is important that computing professionals are able to understand how an organisation works and how it uses information in order to be able to design, implement, maintain and manage secure information systems to support its operations. Examination of different information systems at the operational, tactical and strategic levels will be required, in addition to evaluating their effectiveness and role in terms of decision making and gaining competitive advantage.

\* Non-core modules



## Computing & Application Development

### Level 5 modules

#### Computing Research Project\*\*

30 credits

This unit is assessed by a Pearson-set assignment. Students will choose their own project based on a theme provided by Pearson (this will change annually). The project must be related to their specialist pathway of study (unless the student is studying the general computing pathway). This will enable students to explore and examine a relevant and current topical aspect of computing in the context of a business environment and their chosen specialist pathway.

The aim of this unit is to offer students the opportunity to engage in sustained research in a specific field of study. The unit enables students to demonstrate the capacity and ability to identify a research theme, to develop research aims, objectives and outcomes, and to present the outcomes of such research in both written and verbal formats. The unit also encourages students to reflect on their engagement in the research process during which recommendations for future, personal development are key learning points.

#### Operating Systems\*

15 credits

This unit introduces students to different operating systems such as DOS, Windows, UNIX and Linux. The topics covered are the tasks of operating systems such as controlling and allocating memory, prioritising system requests, controlling input and output devices, facilitating data networking and managing files, including security and protection.

Among the topics included in this unit are: the history and evolution of Operating Systems; the definition of an Operating System; why Operating Systems are needed; how Operating Systems started and developed; Operating Systems management roles; management of memory, processes, processors, devices and files; security and protection: user security, device, application and process protection; inter-process communication; comparison of Operating Systems; distributed and networked systems; concurrent systems; multi-user systems; graphical interface systems; and practical application of Operating Systems: user interface commands of major Operating Systems; installations and extensions of Operating Systems.

#### Computing/Business Intelligence

15 credits

Business intelligence has evolved from technologies such as decision support systems (DSS) to include tools and methods associated with data mining, data integration, data quality and data warehousing in conjunction with other information management systems and applications. This unit introduces students to a range of tools, techniques and technologies for acquiring data and processing this into meaningful information that can be used to support business functions and processes. Within this unit students will examine the concept of business processing in terms of data capture, conversion and information output. Students will also be required to define the tools and technologies associated with business intelligence functionality. The use of a business intelligence tool/s and techniques is also required to demonstrate an understanding of a given problem. Finally, students will be expected to evaluate the impact of business intelligence for effective decision-making.

#### Systems Analysis and Design\*

15 credits

This unit explores the processes of systems analysis and design using two methodologies – the traditional systems development lifecycle methodology providing a comprehensive structured framework and the agile methodology with different framework models developed with the emphasis on variations of iterative incremental modelling. To provide perspective, students will examine the models in both these methodologies. They will consider the particular strengths and weaknesses of the two methodologies and examine the suitability of the methodologies using different examples. Topics included in this unit are: examining the business case for a new system or for upgrading an existing one, looking at traditional and agile systems analysis methodologies and evaluating the merits of each, considering the implications of moving from using the traditional methods of analysis and design to agile methods on analysts, designers and developers in an organisation, and applying systems design tools and techniques.

#### Application Program Interfaces

15 credits

Many applications in use today are a composite of other software. This is true of an application, be it web based, mobile or on a desktop where the functionality of another is used to build upon. Think of an application that locates nearby restaurants – this may utilise an already existing map service as its basis. Or a game application that enables players to invite other players, chat and post high scores to social media all within the game environment. How an application interacts with another is through an Application Program Interface (API).

Typically, APIs consist of methods and tools which are developed by the software author and can provide services and functionality to other application developers without having to 'reinvent the wheel'. Existing APIs provide a huge range of functionality which can be integrated into an application by following the rules of the relevant API. One of the benefits in using APIs is access to existing and proven services that can help speed up development and help standardisation.

The aim of this unit is to introduce students to the nature of APIs by developing proof-of-concept application that utilises existing APIs for common tasks that can include communication, displaying interactive visuals, audio playback and handling a range of user inputs.

Among the topics included in this unit are: identifying what an API is and the need for APIs; types of APIs; application design and development utilising relevant APIs in a suitable development environment; testing of the application; and a critical review of the APIs used.

#### Prototyping

15 credits

A prototype is the first or early sample, model or demonstration version of a concept, design or idea used to test functionality and gather feedback. The objective of prototyping is to build a functional and demonstrable version of a concept and use this version to evaluate different aspects of the concept with end users. A prototype may test a single or multiple facets of a concept and can range in functionality from very basic design mock-ups to fully functional features within complex software applications. This unit introduces students to the role, basic concepts and benefits of prototyping in the design and development process of software applications. The aim of this unit is to enhance a student's understanding of the methodology, terminology and benefits of prototyping in the design and development of secure software applications.

Among the topics included in this unit are: classification and terminology of prototyping tools and techniques, the relationship between prototypes and release candidate software applications, how prototypes differ from release candidate software applications, categorising prototypes by their intended target end user, functionality and testing requirements, methods of prototyping, most appropriate forms of prototype for the different categories of testing, gathering meaningful insights and results from prototype testing, software release lifecycle and software prototyping concepts.

#### Application Development

15 credits

Software drives business and developers drive software – the world is reliant on software, and programming is at the heart of this.

Professionalism and critical thinking, supported by an ability to work independently and as part of a team are core skills of a developer. If you can think logically and you enjoy exploring and dismantling problems, working with others to consider requirements and creating ideas and possible solutions you can gain the experience and learn the skills needed to excel as an Application Developer.

This unit introduces students to Application Development and is designed to simulate the roles and responsibilities of a commercial developer working in a suitable business environment with access to a small team of colleagues. Initially, students are introduced to a business-related problem and will need to adopt and use appropriate methods and practices to analyse, break down and discuss the issues – then, decide, design, create and test a possible solution. Students should be free to debate, evaluate and select different design and development methodologies depending on their own judgement and consideration. On completion, students will be expected to formally evaluate their final application against their design plans and initial requirements.

Among the topics included in this unit are: design and developer documentation; problem analysis; research, system and user requirements; design methodologies and principles; security considerations; development methodologies; Unified Modelling Language (UML), software development lifecycles; teamwork, peer-reviews, development tools and techniques; integrated development environments; debugging, testing, software versions and quality assurance.

# Building the university of tomorrow.

## City University College operates in partnership with Ulster University Qatar.

It is temporarily located in Abou Hamour, close to central Doha, with a new state-of-the-art campus currently under construction in Lusail, Qatar's new lifestyle "smart city" in a peaceful and inspirational environment.

The new campus will transform the student experience and enrich the student community promoting a dynamic stimulating environment.



Current address:  
Jeera Building 39  
Barwa Commercial Avenue  
Doha, Qatar



(+974) 40 198 198



[info@cityuniversitycollege.edu.qa](mailto:info@cityuniversitycollege.edu.qa)  
[admissions@cityuniversitycollege.edu.qa](mailto:admissions@cityuniversitycollege.edu.qa)

**visit:**

[www.cityuniversitycollege.edu.qa](http://www.cityuniversitycollege.edu.qa)  
[www.ulsteruniversity.edu.qa](http://www.ulsteruniversity.edu.qa)  
[www.ulster.ac.uk](http://www.ulster.ac.uk)